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HOW GYMNASTICS ARE TAUGHT IN SWEDEN.

The Chief Characteristics of the Swedish
System of Gymnastics.

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TWO PAPERS

BY

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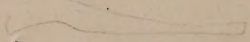
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B. H.

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How Gymnastics are Taught in Sweden.

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WITHIN the last year or two Swedish gymnastics have taken long strides toward being introduced as part of the American system of education. During this time much has been written on the subject and a great deal more has been exhibited practically, not only in Boston but in other cities as well. The system, introduced in Waltham, Northampton, Brockton, Somerville, Salem, Lynn, Worcester, and emanating from Boston, has found its way to Brooklyn, N. Y., Hartford, Conn., Indianapolis, Ind., and to many other cities in the east and in the far west.

It has been said that Swedish gymnastics constitute a "fad" of to-day, but it is fair to presume that they have "come to stay," for truths like those on which this science is based are not evanescent, they grow

more and more admirable with each closer inspection. Swedish gymnastics have stood the test of generations of learned investigators, and yet they remain almost unaltered in the foreground, and are still acknowledged to be superior to all gymnastics up to the present day.

In order not to weary the many who have already had explained to them the theory of this system, I shall discuss a subject which may be of more practical interest, that is, how to introduce gymnastics into the schools with the best results ; for all the theory in the world would help but little if there were no practical application to go with it.

In teaching, the object is not to teach a great deal, but to teach well. The desirability of a teacher's knowing most thoroughly the theory of his subject is indisputable, and there can be no doubt that a wide and diversified knowledge broadens a man's character and benefits him in many other ways ; yet we often find that the teacher who has confined himself to the mastery of one subject and has accomplished it, is the most successful. The teacher who has a smattering or a "picked-up" knowledge of all kinds of gymnastics is the one to be most dreaded ; he is the one who will go the farthest and accomplish the least. He knows so much that he has no way of putting his knowledge into practice. The experience of every teacher of gymnastics may be summed up in a few words : (1) beware of the self-taught instructor ; (2) of the one who has had

only an elementary training; (3) of the one whose training includes everything under the sun. More respect is due to the teacher who conscientiously applies one system of gymnastics, though it be inferior, than to him who uses "the best of the American, the German, the Delsarte and the Swedish systems," and better results may be expected in the first case than from the "eclectic" teacher.

Perhaps the best preparation for introducing a new thing is to find out what others have done; so it may be helpful to speak of the manner in which gymnastics are taught in Sweden, especially since Swedish gymnastics are coming to be so extensively adopted.

The schools of Sweden may be divided into two great classes, the free schools or "folk-schools," and the schools where tuition is paid; both of these being under the supervision of the government. The former gives instruction only in those branches a knowledge of which is necessary to enable men and women to take an intelligent interest in the affairs of the nation. The latter are divided into two grades, the grammar schools and the high schools, or *gymnasia*. We also have three universities, one in Upsala, one in Lund and one in Stockholm, and one more is being established in Gothenburg. These grades differ essentially from those of the American schools. Our free schools correspond to grammar schools, our grammar schools to high schools, and our *gymnasia* to colleges in America.

A high school or gymnasium diploma ("certificate of maturity") from Sweden (no matter from what part of the country) may be accepted here as the equivalent of A. B. (Harvard). The average age of our high-school graduates is 21.

We have no kindergartens, the Swedish mothers preferring to take sole charge of their children's early training, and though the grammar schools have so-called "preparatory classes," the majority of our children are educated at home and taught morals and manners before they are put into the public schools.

Sweden is a country of specialists. In all the schools of high grade, each teacher gives instruction in a certain branch for which he has fitted himself with the utmost care; he is a master of that particular subject and teaches nothing else. The free schools are conducted very much like the public schools of America, having for each room a teacher who teaches all the branches. These teachers, however, do not attempt to give instruction in gymnastics, unless they have had a normal course in this branch; for we do not believe that "any exercise is better than no exercise at all." To apply gymnastics without knowing how, would be just as dangerous as to practice medicine without previous special study. In the larger cities, like Stockholm, a special teacher goes through the school once a day and gives the exercises in each room, since the free schools are not supplied with

gymnasia. Chairs and desks are used as apparatus, and it is surprising to see how the trained teacher makes these simple paraphernalia answer all gymnastic purposes.

When the exercises are given in the school-room they seldom occupy more than fifteen minutes a day, a small dose, which when oft repeated, produces more effect than if the lesson lasted thirty or forty-five minutes, and were repeated only twice or three times a week. Every school has a spacious, graveled yard, and here, in some of the free schools, apparatus is put up. When the weather permits, the teacher gives the lesson out-of-doors and uses these appliances. In the smaller country towns, gymnastics have not been put into the schools as thoroughly as might be desired ; but money in those places is scarce and a special teacher demands a good salary for his services. As a rule, however, there is at least one teacher in the school who has had an elementary course of gymnastics in the "seminaria" or normal schools, and who takes charge of the physical exercise. It is to be especially noticed that these instructors do not attempt movements in which they have had no instruction, and of which as a consequence they know very little.

If we turn now to the grammar schools and gymnasia or high-schools, we find that every one has its own gymnasium in the same building, or else is located near some gymnasium to which the children are sent once a

day for exercise. It is needless to say that each school has its own special teacher of gymnastics, always a graduate of the Royal Gymnastic Central Institute. The whole school is divided into two parts, children from eight to fourteen, and those from fourteen to twenty (or over). Each section, containing sometimes as many as two hundred children, has at least thirty minutes a day for gymnastic work, usually so that the little ones have their exercise immediately before noon-recess, and the others theirs just after the afternoon session. It requires a great deal of skill to handle such large classes in so short a time and yet supply the physical needs of each individual, without overtaxing his ability. But the teachers are able to do it, and that with the very best results.

It should be remembered that Sweden has schools for boys and schools for girls, and that the two sexes do not have instruction in common, except in the free schools and in the colleges. This makes it easier for the teacher of gymnastics; as boys and girls must, of necessity, have different exercises, especially after the age of twelve to sixteen, sex having a strong influence upon the progression of the exercises. The teacher of gymnastics in the boys' school is always a man, in the girls', usually, but not always, a woman. All the children are obliged to take the exercises, unless they suffer from deformity or organic disease, where gymnastics are contra-indicated. To decide who should

and who should not exercise, a physician examines all the children at the beginning of the school-year, and gives a certificate of ill-health to those who are to be excused. He does not, however, measure every child and prescribe the exercises for the individual; for in the first place, measurements taken on growing children are no test of physical development, since a child changes shape and size almost from day to day; and in the second place, a physician is not competent to prescribe exercises, unless he is a teacher of gymnastics as well, which in Sweden means a graduate of the Royal Gymnastic Central Institute. All the children, as far as possible, are sent into the gymnasium and the teacher of gymnastics is responsible for the results, without being interfered with by any one. He is not restricted as to the system of gymnastics he is to apply; he has entirely free hands as to means and methods, for he is supposed to be a master of his profession; he may use any form of exercise that he sees fit, and if the weather is pleasant, he may take the children out of doors for gymnastic games, instead of keeping them in the gymnasium. He groups his pupils, not according to age or grade in school, but according to gymnastic proficiency, and in that manner he is able to get the best results, keeping no one back who should advance, and advancing no one who should be kept back.

In the boys' schools, military drill forms part of the physical education, and for that reason in the early fall

and late spring this form of exercise takes the place of gymnastics for the larger boys, whose previous training enables them to carry guns without injury to themselves. No special teacher is engaged for this, as the teacher of gymnastics usually is or has been an officer in the army. If he is not, he has acquired knowledge of drill while a pupil in the Central Institute.

When the boy graduates from the high-school, he either enters college or takes up some practical profession, and from that time gymnastics are no longer compulsory for him. For the college student, exercise is provided in the college gymnasium ; for the business man, in the gymnastic associations to be found in all cities of any importance throughout the country. In the universities of Upsala and Lund, we find on a faculty a "fencing-master," whose duties are to furnish instruction in gymnastics and fencing to those students who wish to avail themselves of the privilege. But he gives no normal course as part of the college curriculum, so it should be understood that a Swedish college degree does not include gymnastics. In this country, it is a common error to suppose that every Swede must necessarily be competent to teach gymnastics, but unless he has the diploma of the Royal Gymnastic Central Institute, he occupies the same position as the physician without a degree.

The gymnastic clubs found in the various cities are usually composed of men of exceptional gymnastic

skill, men who love gymnastics; and they are taught by the very best instructors the country can produce. In the club gymnasias, like that of the "Stockholm Gymnastic and Fencing Club," where in 1884 I had the honor to be instructor, one finds that Swedish gymnastics cover a very broad surface, for here those exercising are confined no longer to the apparatus belonging to Swedish gymnastics proper, but the round horizontal bar, the dumb-bells, Indian clubs, etc., are quite extensively used; and an American might say, when looking at the exercises, that those were American gymnastics. The fact is, however, that Swedish gymnastics are a system of movements, not of apparatus; and that any kind of paraphernalia is allowed in the Swedish system, provided it is used on true gymnastic principles. That is, we use the movements in their proper progression, and thus can apply all of the *materia gymnastica* as we need it.

To provide teachers in Sweden there is a normal school of gymnastics, the Royal Gymnastic Central Institute in Stockholm, which school has been called by Dr. Hartwell "the finest of its kind in the world." Not long ago it was the only school of its kind existing, and it still remains the only one in Sweden where it is possible to gain a certificate as teacher of gymnastics. This Institute admits to its normal course a limited number of men and women, about twenty of each every year. To enter, one is required to present a "certificate

of maturity," or to pass an examination to prove the possession of an equivalent amount of knowledge. Men and women have all their lectures and exercises separate. The complete course for women is two years; that for men is divided into three sections: one year for instructors of gymnastics for the army; two years for teachers of gymnastics; and one year additional for those who wish to devote themselves to the practice of medical gymnastics; making three years for those who wish to obtain the complete diploma and the degree of the school. The degree given is "*Gymnastik-Direktor*" or Master of Gymnastics. More commonly, however, the graduate is called "*sjukgymnast*" or medical gymnast. The course includes the complete theory of gymnastics, anatomy (with dissection), physiology, hygiene, kinesiology, pathology, and various minor branches as practical instruction in all branches of gymnastics. In order to provide material for those who wish to fit themselves to be teachers, the children from several schools use the gymnasium every day during the week, and the normal-pupils of the second year's course serve as teachers. This is one of the best features of the school; for the graduate then becomes not only a storage-battery of theory, but a teacher of practical experience as well. Each pupil has a number of children for whom he is responsible, and he takes his turn in handling the whole class of one hundred and fifty or more. The experience he

thus gains enables him to take charge of the large classes he is expected to handle in the public schools. In the medico-gymnastic department, several hundred persons a day are treated by medical gymnastics: and during the third year's course, the medico-gymnastic students are obliged to assist in applying the movements to the sick, in order that they may gain experience before receiving their diplomas.

No one can apply for a position as teacher of gymnastics in the public schools of Sweden, unless he is a graduate of the Institute, or at least has taken its two years' course; and no one can receive a license from the board of health to practice medical gymnastics unless he holds the degree of the Institute. Physicians are excepted from this last statute; but as their degree does not include gymnastics, they must take the course of the Institute if they wish to teach gymnastics. At the medical colleges in Upsala and Lund there is arranged an elementary course in medical gymnastics for medical students, but as the whole course only lasts about eight weeks the physicians who take up massage as a specialty go to the Central Institute. The elementary instruction just referred to is by no means a normal course of gymnastics, as it includes only the practical application of the medico-gymnastic movements, or the merely mechanical part of massage.

In the training schools of the army, there are elementary normal schools of gymnastics, so that the

non-commissioned officers shall be able to give instruction under supervision of the regimental teacher, who must be a graduate of gymnastics.

To provide for the back-woods towns, where money is scarce and a graduate cannot be hired, the "seminaria" furnish elementary courses in gymnastics, enabling the teacher in the "folk-schools" to apply elementary gymnastics in an intelligent manner. Yet it should be understood that these teachers are not considered as teachers of gymnastics.

The Director of the Central Institute has for one of his duties to supervise the instruction in gymnastics of the whole country; and for this purpose he travels from city to city, and appears upon the scene most unexpectedly. If the teacher in any place is found incompetent, he is discharged without further ado; and if he wishes to continue as a teacher, he must take a post-graduate course before applying for another position. This supervision keeps the standard very high, as no one wishes to be disgraced by a discharge. It also causes uniformity of method, as the supervisor has it in his power to order any change he sees fit. The quality of work secured is exceedingly good.

As for the system taught, so much has been written about it, that I will simply call attention to the following points:

The exercises are chosen for their physiological effects, so that only such are used as are needed for a

desired result; all of doubtful or injurious effects are excluded. The development of the respiratory organs being of prime consideration, no movement is allowed to interfere with free respiration, and the utmost care is taken that the exercises should produce a proper carriage of head and thorax. As the movements are practiced for their effects on the body—not on an audience—we do not drill, drill, drill the pupils on a certain movement so as to teach them the “trick” of it, but take each one’s ability into consideration, even though we consider that the form of the movement is of utmost importance.

All the exercises are executed to words of command, as that is the only method by which the pupil is enabled to concentrate his whole attention upon one thing at a time, all other methods, such as memorizing, imitation, the use of music, etc., causing him to think of one thing while doing another.

The progression is very strict, so that the exercises not only grow from lesson to lesson, and are made to conform to the differences of age, sex, strength, nationality, etc., but also so that there is progression in every day’s lesson. Practical investigation having proved that the exercises could be made stronger, their effects more complete and progression more rapid, if a certain order were observed in every lesson, this order was made the basis for the classification of the exercises. Thus our movements are grouped as 1. Introductions.

2. Arch-flexion. 3. Heaving-movements. 4. Balance-movements. 5. Shoulder-blade-movements. 6. Abdominal exercises. 7. Lateral trunk-movements. 8. Slow leg-movements. 9. Jumping and vaulting, and 10. Respiratory exercises ; each lesson containing one or more from each group in the order enumerated.

The system is rational, for there is a scientific reason for everything that is adopted and used ; and it is practical, for it is independent of apparatus. It can be applied anywhere and everywhere. The old-fashioned idea that a bath is a necessity after every lesson in gymnastics has been discarded, thanks to a proper use of respiratory exercises ; for by providing a greater elimination of water through the lungs, the skin-evaporation does not increase to any marked degree ; and no excess of perspiration occurring there can be no need of a bath to prevent taking cold.

The system is one of exercises and not of apparatus ; nevertheless apparatus is desirable and hence a gymnasium is a much needed addition to every school. For although good results can be attained by free exercises applied in the school-room, the best will never be secured until gymnasia are provided. This is not only because of the greater variety of movements that can be given in a gymnasium, but also because a gymnasium necessarily calls for a special instructor, one who has made gymnastics his profession. Even if a gymnasium cannot be provided, a special teacher is desirable ; for

a teacher who teaches all branches cannot be expected to be an expert also in gymnastics, a science requiring a special training and a natural aptitude if the best results are to be obtained. It will also be found that the exercises will furnish more recreation if a special teacher goes through the classes once a day and applies the movements, for the children often get tired of seeing the same teacher all through the day, and do not give him the same attention as when they have had the relief of seeing some one else for a while. The exercises thus provide a change, not only physically but mentally.

The Chief Characteristics of the Swedish System of Gymnastics.

READ AT THE CONFERENCE ON PHYSICAL TRAIN-
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IF a chemist were called upon to explain in a few words the general contents of his science and how it differs from other sciences, he would probably refrain from trying such an experiment; for his dilemma would be the same as mine to-day; he would hardly know where to begin and how to select from such an abundance of material. The fact is, that to understand fully the Swedish system of gymnastics, or any other that has any righteous claim to the prefix "system," it is necessary to be thoroughly conversant with the principles that are fundamental to all gymnastics; it is a knowledge not to be gained in a few minutes, nor to be explained in a few words. Yet I will attempt to state briefly in what respects the Swedish method differs from the others.

The Swedish system of gymnastics, devised by P. H. Ling in the beginning of this century, was already at

its birth founded upon the laws of nature and upon the laws of the human organism. Since the days of Ling the system has been much perfected and improved by Ling's followers, who have made it keep even pace with the progress of those sciences upon which it is based. For that reason the system is not altogether as antiquated as some of its antagonists would fain have the uninitiated think ; and the fact that it has survived in a country where nothing is done in a superficial and irrational way ought to be a guarantee for its efficiency.

First let us consider how the exercises are selected.

The exercises are chosen according to their *gymnastic value*, which quality depends on how the movement combines the utmost effect on the body with simplicity and beauty of performance. Only such exercises are used whose local and general effects are fairly well known and proved to be needed by the body. Not only the needs of the individual, but his abilities as well are to be taken into consideration ; and for that reason the teacher must know how to vary the exercises according to the degree of physical culture possessed by the pupil. The movement should have its developing effects in a short time ; it should be simple so that every pupil can do it fairly well ; and it should have beauty of execution according to each one's ability.

In order to supply the needs of the organism and to develop the body harmoniously, the exercises have to

overcome a great many tendencies to faulty growth or bad posture ; and the *greater or less value* of a movement depends on its power to counteract or correct these tendencies. It naturally follows that the system uses no exercises which would encourage such faults (for instance, using chest-weights for beginners, etc.). If an exercise gives rise to faulty posture, it is discarded, or at least postponed till some future day when it can be correctly executed.

In accordance with the physiological truth that the first, greatest, and most extensive effect of exercise is on the respiratory organs, and that hence, during exercise, these organs must be allowed perfect freedom of motion, the Swedish method disapproves of and discards all movements which compress the chest (such as Indian club swinging), or which in any way interfere with free respiration, and the greatest attention is given to the proper development of the chest. In recognition of the fact, that to be truly strong a man must know how to breathe well, much prominence has been given to "respiratory" exercises. "Breathe!" "Don't hold your breath!" are common exhortations in gymnasiums where this method is used.

In judging of the effects of an exercise, we think the least of the muscular development produced ; for the effect of *all* general exercise is to develop muscle, and this aim is reached without especially working for it. But we think all the more of the effects produced

on nerves, vessels, etc., for the results in this direction can be vastly changed by varying the movements (as demonstrated in Medical Gymnastics); in other words, the exercises have been made to harmonize with the laws of physiology. How this is done will be understood from the description of the exercises which are contained in each lesson (to which I shall soon refer).

Measuring a man's strength, we compare the man to himself; we do not say that a man is strong because he can hold so much air, or because he can lift so many pounds, or because he can jump so high. But when he possesses a healthy, well-balanced, and well-proportioned body, which his will has under good control, then he possesses physical culture, even though in the eyes of some he may seem weak as compared to others. It is this health, symmetry, and harmony we aim at in selecting the exercises; and that the Swedish method accomplishes its purpose has been too well demonstrated to leave room for doubt.

Movements are never chosen "because they look so pretty"; for educational gymnastics do not aim at beauty of performance. When gymnastics do have such an aim they are called "æsthetical," and these have but little effect toward physical development. And yet we claim that when a movement is well done it is graceful as well. Some persons mistake a languid manner of motion for grace, and hence claim that the Swedish exercises "are too jerky to be graceful." It

is to be remembered that all gymnastic movements are not slow, nor do they have an even velocity ; there are some that can and always should be done with great and accelerating speed, and you can move quickly and yet do it gracefully. By making the component motions of movements like the arm-extensions merge into each other in a "graceful" manner, the effect of the movements is completely lost. On the other hand, if exercises like leg-elevations, backward-flexions of the trunk, etc., are done in a "jerky" manner, these movements are incorrectly executed and have lost their best effects.

Our second point for consideration is the regularity of method.

In order that gymnastics be systematic there must be progression. In the Swedish method this is adhered to very strictly, so that the exercises, beginning by the very simplest, gradually become stronger and more complicated. So closely has the effect of movements on the human organism been studied, that the slightest change of position—even the turning of a hand—has its recognized influence in the progression ; and it is here that the system demands the most from the teacher : without a good knowledge in this direction he becomes worse than useless. No movement is attempted unless the previous ones of *the same kind* have been thoroughly practiced ; and no exercise is used whose commencing position has not already been

practiced sufficiently to guarantee its correctness ; for, if the commencing position is faulty, the movement cannot be rightly executed.

The Swedish method does not disapprove of chest-weights, dumb-bells, and allied forms of apparatus ; but through *years* of constant practice it leads up to them, claiming that before increasing the weight by external means, you should make a progression by prolonging the lever of the weight already present. So, for instance, a backward-flexion of the trunk with the arms extended upward and the hands holding weights must necessarily be preceded by the same movement without the weights, and that by a flexion with the hands fixed behind the neck, and still earlier with the hands on the hips, etc.

In a like manner the method prepares the way for æsthetical gymnastics, for fencing, military drill, and other forms of applied gymnastics, yet insisting that educational gymnastics form the basis of all these. This is reasonable ; for, unless you have learned to control the involuntary co-ordination of motion, which is the cause of "faults" in gymnastics, you will hardly be able to produce the great voluntary co-ordination required in all forms of advanced gymnastics.

Now, when you are to put this progression into practice, you will not feel as if groping in the dark ; for, in this method, the movements have been thoroughly systematized and included under distinctive headings,

where there is no more a jumble, but where the rules of progression can be well carried through by a teacher familiar with the theory of gymnastics. After years of practical investigation it was found that if, in every lesson, the exercises followed each other in a certain, comparatively unchanging order, the movements could be made stronger ; they could be given more duration ; ill results could be completely prevented ; and hence the good effects became all the more pronounced. For that reason all movements were divided into classes, and this order was made the basis for the classification. All the exercises can be included under the various headings ; and within each class—with infinite variety—the exercises grow gradually stronger as the pupils develop.

This classification will be found not only to contain exercises filling the needs of the organism, but to correspond to physiological principles as well. To understand this we shall have to consider it a little in detail.

(1) *Introductions*. By these we understand some simple exercises used at the beginning of a lesson to gain a little general muscular control, to correct the base and general position, etc.

(2) *Arch-flexions*, which consist of backward-flexions of the trunk ; they have the effect of straightening the dorsal region of the spine ; of vaulting the chest forward by drawing the lower ribs apart, thus increasing

the chest-capacity ; and of cultivating the extensibility of the upper region of the abdomen.

(3) *Heaving-movements*, which consist of various exercises in a hanging position, and others that have the effect of expanding the upper part of the chest by lifting it upward ; incidentally they also develop the arms. If these movements are not preceded by the arch-flexions they will produce lameness in the upper region of the abdomen. Free-standing arm-extensions are classified in this group, since their effects resemble those of heaving-movements, for which they also prepare the way.

(4) *Balance-movements*. The two preceding exercises are strong, hence they increase the heart-beat noticeably. Now a rest ought to ensue,—the word *rest* not to be understood as meaning inactivity, but changed activity,—and the time is conveniently filled by the gentle movements which we call balance-movements. These require but little effort from any one of the many muscles brought into play ; the heart-beat is not increased by them, but it becomes lessened by the mechanical propulsion of the blood into the legs (the more equal distribution of the blood-pressure). At the end of a balance-movement the pupil is again ready for more specific work.

(5) *Shoulder-blade-movements* consist of arm-movements which have the effect of placing the shoulder-blades in correct position. These exercises are in a

measure dependent on arch-flexions and heaving-movements; for, unless the dorsal region of the spine is straightened and the upper region of the chest is extensible, but little can be done toward overcoming a "stoop."

(6) *Abdominal exercises* bring into forcible play the abdominal walls; their effects are to incite peristalsis, to promote digestion, and to shorten the stay of the food in the intestinal canal.

(7) *Lateral trunk-movements* consist of rotations and sideways-flexions, etc., of the trunk. They have a far-reaching effect on the general circulation by accelerating the flow in the inferior vena cava, leading the blood off from the abdomen and legs, etc. Incidentally they also expand the chest laterally and strengthen the muscles around the waist.

(8) *Slow leg-movements*. By this time the heart-beat is again much increased; the slow leg-movements furnish a means of lessening it. For, by these the blood becomes mechanically propelled forward, through the forcible, passive extension of some muscles, while others are in gentle, active contraction. These movements may be conveniently omitted, when the previous exercises are not strong enough to make them a necessity.

(9) *Jumping and vaulting*. These exercises have the effect of cultivating the general elasticity of the body more than does any other form of movement. And if

we recall that grace and elasticity are very nearly identical in gymnastics, we understand the gymnastic need of these movements. But they also have practical value; for we are often called upon to jump; and if it so happens, it is well to know how. They develop courage, self-reliance, a true appreciation of space, and produce great ability of voluntary co-ordination of motion as well. The Swedish method differs from all others (not founded on it) in its manner of preparing for the jumping by practicing the intermediate positions, before the real movement is attempted, as well as in demanding that correct "landing" should be insisted upon. In a like manner the vaulting is prepared for by first cultivating in the pupil the habit of clinging to the bar, no matter what happens, before he is made to leap over it. And the progression is so strict, that we have no accidents to record in these "violent" or precipitate movements.

(10) *Respiratory exercises.* These consist of deep inhalation and exhalation accompanied by some arm-movement that will expand and contract the chest in even rhythm with the respiratory act. The movements, which can be conveniently combined with some movements of the legs or trunk, have the effect of restoring free respiration (the jumping putting the pupil out of breath) and to lessen the heart-beat. Respiratory exercises are brought in not only at the end of every lesson, but at any time when their effects are

needed, and often also at the beginning of a lesson containing strong exercises that require an increased amount of oxygen.

To this daily curriculum various additions are often made, such as to bring in one more shoulder-blade-movement, when needed; or another heaving-movement; or an abdominal exercise; or to leave the last one entirely out for children, and so on—as the teacher may decide.

In addition to the free-standing movements, each class contains numberless exercises on apparatus, and supplies a sufficient number to form a progression from early infancy to well-developed manhood — through all the grades in school and college, and in after-life as well.

The third point in which the Swedish system differs from the majority of others is in the method of applying the exercises.

The movements are applied to words of command, this being the only method enabling the pupil to concentrate his mind on one thing at a time, that thing being his own movement. This is in accordance with the definition of gymnastic movement, which tells us that, unless a movement is done with full volition, it ceases to be gymnastic. In those methods which use imitation, memorizing, etc., the movements become mechanical, the pupil dividing his attention between himself and something outside him, *i. e.* they cease to be gymnastic. Objections have been raised to using

words of command, because "it is too tiresome," "too soldier-like," etc. To this we can answer, that to get the full recreation and rest out of exercise we should put our whole mind into it, this being much less tiresome than to exercise while we think of something else. On the one hand we have the theory of a small minority of antagonists, that gymnastics without music do not give enough recreation, especially to children, because there is not enough exhilaration in such exercises; on the other hand we have the statement of a large majority of children and others who have tried gymnastics to music as well as to words of command, the children saying that there is "much more fun" in the latter, and the adults that there is "much more to them." As for the second objection we claim that discipline is necessary not only for a soldier but for everybody, if we are to have any control whatsoever over ourselves; and hence discipline should form a part of everybody's education. Words of command have other advantages. They teach the pupil to think quickly; to act as quickly; and to do a thing in the shortest possible time. This is no little gain in the present age of hurry and competition. Besides, the use of commands enables the teacher always to keep his class "in hand"; it becomes easier for him not only to teach, but to correct as well.

The Swedish method disapproves utterly of the use of music, for the very simple reason that but few gym-

nastic movements are rhythmical, and cannot be made to be so without sacrificing the movement. On the other hand, every gymnastic movement has a rhythm of its own, which, however, distinctly differs from the rhythm of music. If music were to be used, its rhythm would have to change at every motion, and I doubt if any player, even a Rubinstein, would be able to make it do so. Take, for instance, such a movement as "preparation to jumping" (consisting of 1. Heel-elevation. 2. Knee-flexion. 3. Knee-extension. 4. Lowering of the heels); the first motion is exceedingly quick; the second moderately quick; the third comparatively slow; and the fourth still slower. Now, where is the music to fit such a movement?

A recent lecturer on gymnastics made the somewhat startling statement that "the arm-movements are not gymnastics" (for example: arms extended sideways, in front, above the head, etc.) If that teacher had said "arm-movements done to music are not gymnastics," the statement would have been correct. For let us investigate these arm-extensions. Starting with arms hanging down, they consist of flexion upward of the forearm, a movement occurring slowly from beginning to end,—if it is to be done correctly,—and extension in any direction, which movement, once started, occurs with great and accelerating speed. Now, if this is done to music, the flexion takes place so quickly that the forearm rebounds and gives the intermediate position

of semi-flexion instead of complete flexion. In consequence thereof the extensors are not in the state of complete relaxation which should exist before they are made to contract, and their contraction will not be as forcible nor as quick as it ought to be. Besides, the music will give it the same speed as it gives to the flexion, which is entirely wrong. In most flexions a great many comparatively strong muscles perform the motion, hence these movements must occur slowly ; whereas the extensions are executed by few and comparatively weaker muscles, hence they can and should occur more quickly than the flexions. This is especially evident in the arm-extensions just mentioned, and when they are done to music, their gymnastic form always has to be sacrificed, *i. e.* they cease to be gymnastics. In a like manner we could investigate all other gymnastic movements and with the same result in all except a few oscillatory movements, like walking, running, etc.

Besides, when exercising to music, the pupil will be found to pay more attention to the rhythm of the music than to the form of the movement (if we assume that the latter could be made rhythmical), and we get the same result as in all cases where work is done with divided attention—one of the things has to be sacrificed for the other.

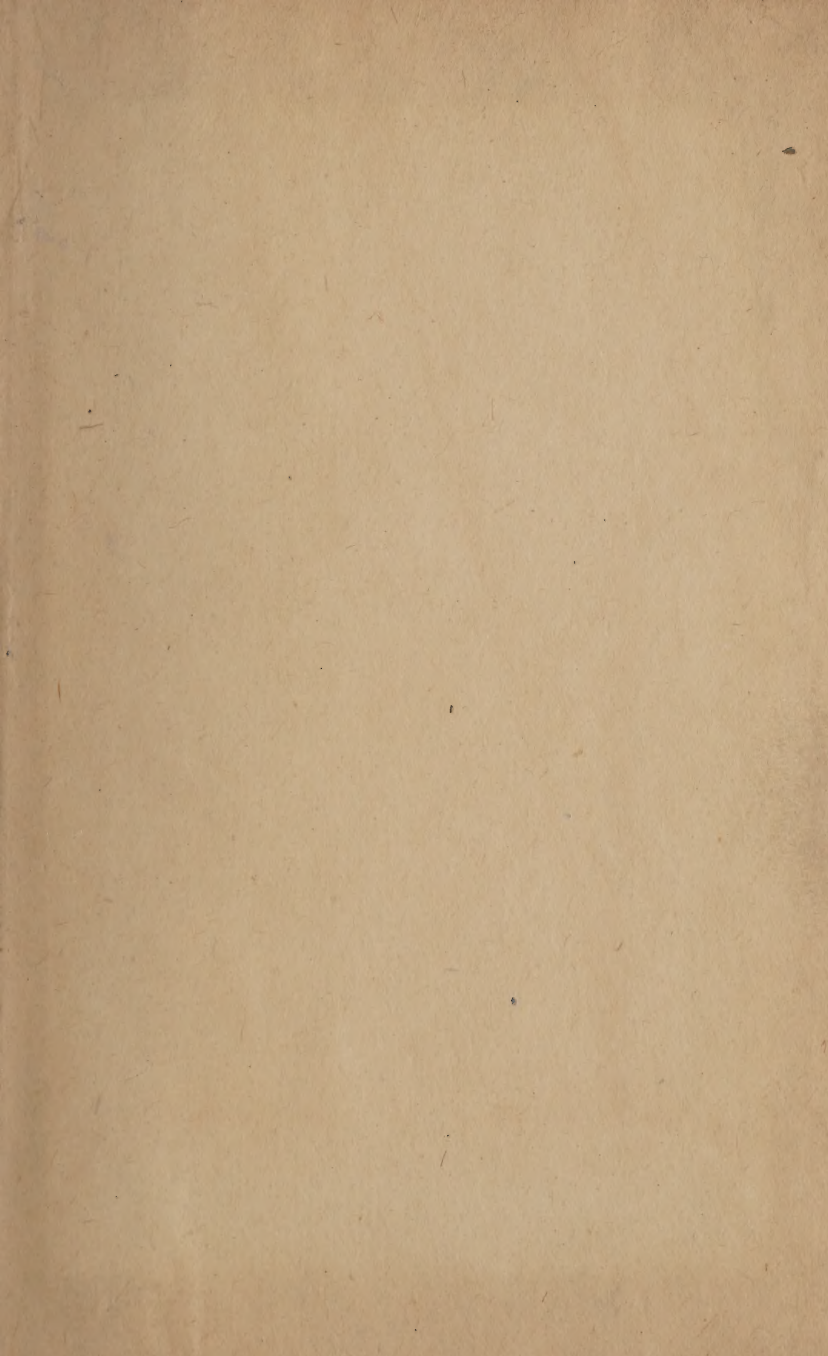
From the above it will be seen that the system is *rational*, since it seeks a reason for everything that it

uses or adopts: it makes theory and practice harmonize. But it is *practical* as well; for it does not rely on elaborate apparatus for existence, since the exercises, not the apparatus, constitute the system. The movements can be taken anywhere where there is sufficient floor-space to stand on and sufficient oxygen in the air. () the other hand, though the system prefers its own apparatus, the exercises can be most easily adapted to apparatus belonging to other systems, or to such simple means as ordinary chairs and desks, or other furniture. Though apparatus is desirable, it is not absolutely necessary for good physical development, especially in gymnastics for children.

Whatever its deficiencies, the system has not only survived on its own merits, in spite of the close scrutiny to which it has been subjected by gymnastically learned men all over the world, but it has finally been adopted in every country where its principles have been thoroughly tested, even conservative England having at last yielded.

Before closing, I take occasion to warn you against confounding Swedish Educational Gymnastics with Medical Gymnastics, commonly known as "Swedish Movement Cure"; although based on the same principles, the two are entirely different, not only as to their purposes, but in the exercises used as well.

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